Abstract Submitted
for the NEF14 Meeting of
The American Physical Society

Kinetics of crystalline to smectic A (K–SmA) phase transition of 4-decyl-4-biphenylcarbonitrile liquid crystal DIPTI SHARMA, WIT — In this study crystalline to smectic A (K–SmA) phase transition of 4-decyl-4-biphenylcarbonitrile (10CB) liquid crystal was studied using calorimetric technique. Two types of scans – heating and cooling were performed from 250 to 350 K, and from 350 to 250 K. A clear difference in K–SmA phase transition was observed between heating and cooling scans. An inclination effect in K–SmA transition was observed on cooling which is completely absent on heating. The inclination of the K–SmA transition peak increased and showed the presence of a heating rate kinetics in the K-SmA transition which can be explained in terms of the presence of time lag and increased activation based on the density and nature of the material.

Dipti Sharma
WIT

Date submitted: 05 Oct 2014 Electronic form version 1.4